

WHAT IS CLAIMED IS:

- 1 1. A muscle strengthening and rehabilitation apparatus,
 2 comprising:
 3 (12) a first surface for receiving at least one extremity; and *Beam*
 4 a generally hemi-ellipsoidal second surface ⁽²⁰⁾ for contacting a support
 5 surface, wherein the second surface allows for pivotal movement of the extremity
 6 in any direction, and the radius of curvature of the movement varies depending upon
 7 the direction the extremity is pivoted. *case shape*
- 1 2. The muscle strengthening and rehabilitation apparatus of
 2 claim 1, wherein the first surface is generally flat and elliptical, having a major
 3 diameter and a minor diameter. *case*
- 1 3. The muscle strengthening and rehabilitation apparatus of
 2 claim 2, wherein a thickness is defined as the distance from the first surface to the
 3 second surface measured along a line approximately normal to the first surface and
 4 passing through the intersection of the major and minor diameters, and wherein the
 5 length of the major diameter is about 13.5 inches, the length of the minor diameter
 6 is about 6.0 inches, and the thickness is about 3.0 inches.
- 1 4. The muscle strengthening and rehabilitation apparatus of
 2 claim 1, wherein the apparatus comprises a one-piece polyethylene material. *case*
- 1 5. The muscle strengthening and rehabilitation apparatus of claim
 2 1, wherein the second surface further comprises a flat area allowing the apparatus
 3 to remain stationary with the first surface oriented upward when the apparatus is not
 4 in use.
- 1 6. The muscle strengthening and rehabilitation apparatus of claim
 2 1, wherein the second surface further comprises a generally flat, circumferential
 3 band disposed adjacent to the first surface.

1 7. The muscle strengthening and rehabilitation apparatus of
2 claim 1, further comprising a plate attached to the first surface.

1 8. A one-piece muscle exercise apparatus, comprising:
2 an upper surface for receiving a user's extremity; and
3 a convex lower surface for contacting a support surface, the lower
4 surface having a plurality of different radii allowing the extremity to pivot about the
5 lower surface in any direction, such that exercises utilizing the different radii can
6 be performed without reorienting the extremity on the upper surface.

1 9. The muscle exercise apparatus of claim 8, wherein the upper
2 surface is generally flat and elliptical, and the lower surface is substantially hemi-
3 ellipsoidal.

1 10. The muscle exercise apparatus of claim 8, wherein the
2 apparatus comprises a foam material having a density greater than about 2.5 pounds
3 per cubic foot.

1 11. The muscle exercise apparatus of claim 8, further comprising
2 a plate attached to the upper surface.

1 12. A muscle strengthening and rehabilitation apparatus,
2 comprising:
3 a unitary polyethylene foam structure having a density greater than
4 about 2.5 pounds per cubic foot, wherein the foam structure has a generally flat first
5 surface for receiving at least one extremity, the first surface having a length of
6 approximately 13.5 inches, and a substantially hemi-ellipsoidal second surface for
7 contacting a support surface and creating a contact point thereon,
8 wherein pivotal movement of the extremity changes the position of
9 the contact point to allow for movement in any direction, and the radius of curvature
10 of the movement varies depending upon the direction the extremity is pivoted.

1 13. The muscle strengthening and rehabilitation apparatus of
2 claim 12, wherein the first surface is generally elliptical, having a major diameter
3 and a minor diameter.

1 14. The muscle strengthening and rehabilitation apparatus of
2 claim 13, wherein a thickness is defined as the distance from the first surface to the
3 second surface measured along a line approximately normal to the first surface and
4 passing through the intersection of the major and minor diameters, and wherein the
5 length of the minor diameter is about 6.0 inches and the thickness is about 3.0
6 inches.

1 15. A method of muscle strengthening and rehabilitation,
2 comprising:
3 providing an apparatus having a first surface and a generally hemi-
4 ellipsoidal second surface;
5 disposing the apparatus between at least one extremity and a support
6 surface, wherein the extremity contacts the first surface and the second surface
7 contacts the support surface; and
8 pivotally moving the extremity while it remains on the first surface,
9 wherein the radius of curvature of the movement varies depending upon the
10 direction the extremity is pivoted.

1 16. The method of claim 15, wherein disposing the apparatus
2 comprises placing at least one foot on the first surface, and placing the second
3 surface in contact with a wall.

1 17. The method of claim 15, wherein disposing the apparatus
2 comprises placing at least one foot on the first surface, and placing the second
3 surface in contact with a floor.

1 18. The method of claim 15, wherein disposing the apparatus
2 comprises placing at least one hand on the first surface, and placing the second
3 surface in contact with a wall.

1 19. The method of claim 15, wherein disposing the apparatus
2 comprises placing at least one hand on the first surface, and placing the second
3 surface in contact with a floor.

1 20. A method of increasing proprioception, comprising:
2 providing an apparatus with a first surface and a generally hemi-
3 ellipsoidal second surface;
4 disposing the apparatus between at least one of a user's feet and a
5 support surface, wherein the user's foot contacts the first surface, and the second
6 surface contacts the support surface; and
7 shifting at least a portion of the user's weight to the foot on the first
8 surface, such that the user must at least partially balance on the apparatus.

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